Exercises

1- In example III.1 calculate ρ.

2- The following table shows the weights of a sample of 12 fathers and their oldest adult sons

weights of fathers (kg)	65	63	67	64	68	62	70	66	68	67	69	71
weights of son .	68	66	68	65	69	66	68	65	71	67	68	70

compute ρ.

3- consider the following data

X	1	2	3	4	5	6
Y	6	4	3	5	4	2

(a) Draw a scatter diagram

(b) From the scatter diagram guess whether r is closer to 1, -1 or 0

(c) Compute r.

(d) Find the linear prediction equation and predict the value of Y corresponding to $x = 4$ from this equation.

(4) A study was made on the amount of converted sugar in a certain process at various temperatures. The data were recorded as follows.

Temperature X	1	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2
Converted sugar Y	8.1	7.8	8.5	9.8	9.5	8.9	8.9	10.2	9.3	9.2	10.5

(a) Find the linear prediction equation

(b) Predict the value of Y coresponding X = 1.75.

(5) The amounts of a chemical compound, Y, which dissolved in 10
grams of water at various temperature, X, were recorded as
follows.

X	0	15	30	45	60	75	8	12	25	31	44	48
Y	6	10	21	33	39	51	8	14	24	28	42	44

(a) Draw. scatter diagram.

(b) Estimate the amount of chemical that will dissolve in 100 grams of water at 50°C ? → $X = 50$ $Y = ?$